

Digital Arizona Program

presentation to

PSCC

September 18, 2012



ASET

Arizona Strategic Enterprise Technology

Project began: with \$6.3M
federal stimulus grant

Challenge Now is: How do we not
end up with another three ring
binder with a great policy sitting
on the shelf after a four years and
having spent \$6 million on
mapping and planning with
nothing to show for it.

Mission now is: Implement a sustainable, leveraged broadband plan for accelerating transformation of economic growth, education, healthcare, and business in Arizona.

Primary Approach: Deploy conduit along state highways and rural frontage roads to be leased to providers at cost to facilitate availability of fiber Internet middle-mile capacity to support providers' investments in more and faster services for rural Arizona.

Two Highways for (nearly) the price of one!

Trench + Conduits \approx Cost of Paint Striping.

Passed Arizona Digital Highways Law to support this.

WHY DOES IT MATTER...

JOBS AND GDP IMPACT (NEW HARD DATA)

2007 MIT Study

- In Counties with Broadband Deployment the Sales Per Capita Grew Almost Twice as Fast as Counties Without
- Broadband Deployment Increased Employment by Over 5 Percent
- Larger Impact in Smaller, Rural Communities

2011 Chalmer University Study

- Every Doubling of Broadband Speed Increased GDP By 0.3%
- If applied to Rural Arizona could potentially have the following impact:

$$\begin{array}{l} \text{AZ Annual GDP } \$277 \text{ Billion} \\ \times \quad 15\% \text{ (Rural Portion of AZ GDP)} \\ \times \quad .6\% \text{ (4x Increase in Rural Broadband – 1mb to 4mb)} \\ \hline = \quad \text{Quarter Billion potential recurring AZ Rural Increase / Year} \end{array}$$

2011 McKinsey Global Institute

- The Internet Accounts for 21% of all GDP Growth Over the Last 5 Years in Developed Countries WE ARE 21st PER CAPITA IN CAPACITY IN THE WORLD.

STRATEGY: ACCELERATE BUILDING CAPACITY WITH LEAN GOVERNMENT BY HARNESSING EXISTING TAXPAYER OWNED ASSETS

- Leverage Public Rights-of-way
 - Two Highways for (nearly) the cost of one
 - Canals
 - Power-lines
 - Railroads
- Recommend Permitting and Easement Best Practices
- Leverage Existing \$6.3 Million Federal Grant Into Sustainably Funded Mechanism For Acceleration of Digital Capacity Build-out
- Provide Long-range State-wide Planning



Highways



Water



Electricity

**Hi Capacity Digital
Communication Is The New
“Essential Infrastructure”**



DIGITAL ARIZONA COUNCIL

- Council has Twenty Members
- Representation from:
 - ADOT
 - ADE
 - Large Providers
 - Small Providers
 - Rural & Urban Communities
 - Healthcare
 - Education
 - Rural Economic Development (COGs)
 - Business Entities via ATIC and AZTEC
- Six Task Groups—67 participants 25 four-hour meetings to date. Detailed input from Providers, ADOT, ADE, ACC Communities, Health Providers/Payers, Economic Developers

COUNCIL TASK GROUPS

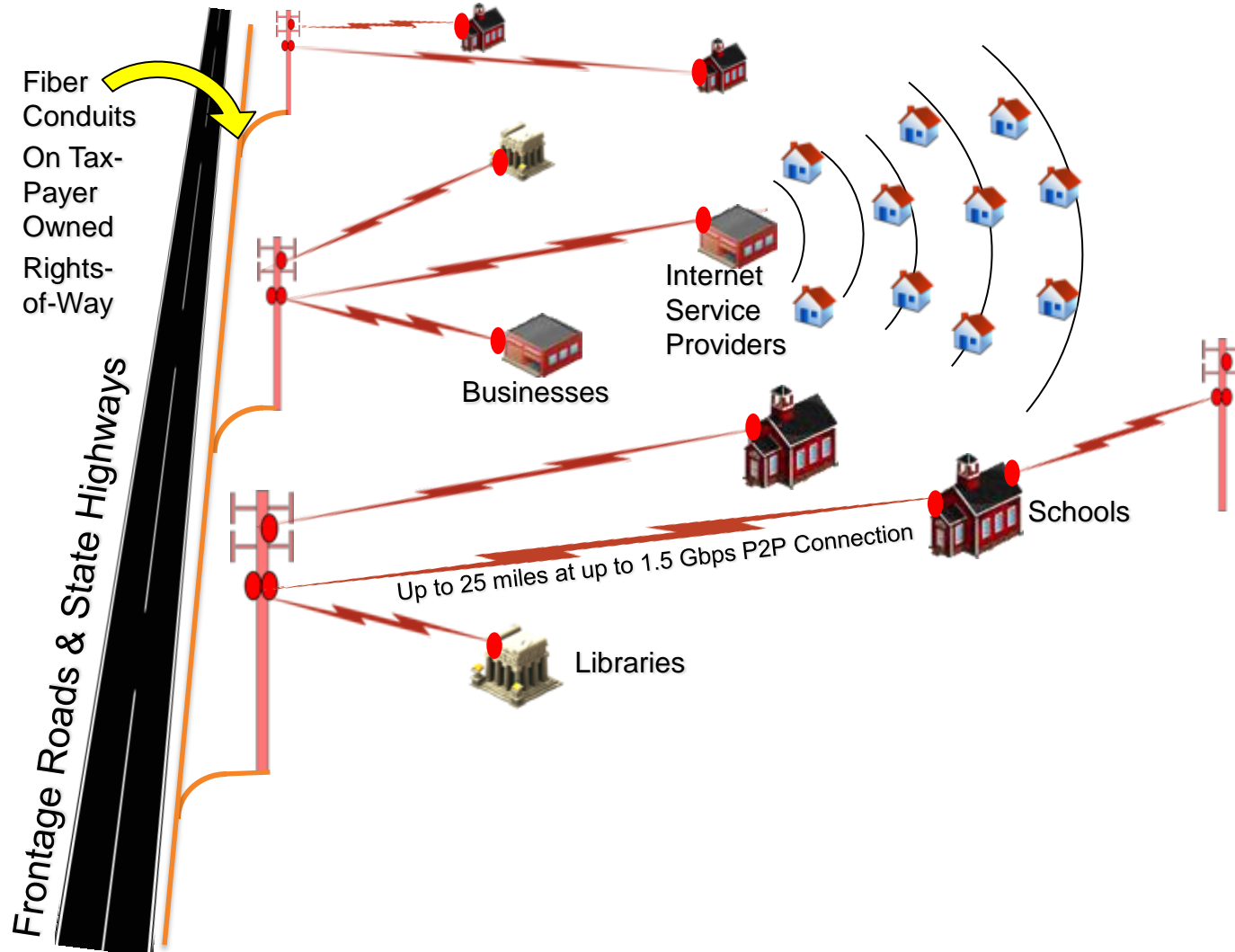
24 MEETINGS 67 PARTICIPANTS TO DATE

- Public Policy Recommendations
 - State Broadband Strategic Plan & Map Use
 - Best Policy Practices
 - Implement Independent Rights-of-Way Study Recommendations
 - Tax Policy
 - Sustainable Funding Model
 - Sustainability of Broadband Capacity Growth by private sector
- Rural Community Engagement
 - Demand Aggregation
 - Middle Mile Solutions
 - Provider ROI Enhancement
 - Community Technical Assistance
- Economic Development via Broadband
 - Technical Planning Assistance To Communities
 - Application Demonstrations
 - eLearning—Distance Learning
 - eHealth
 - eCommerce
 - eGovernment
 - eQuality-of-life
- Broadband Application Demonstration Projects are being planned and will justify funding and investment models and strategies

ASET SUCCESS MEASURES

- Non-Metro Broadband Capacity Increased By 20% by 2014 over current baseline
- Non-Metro Broadband Adoption Increased By 20% over current baseline by 2014
- Increased Middle Mile Capacity (Both Gigabits/Sec Per Mile & Actual route miles) Increased by 100% against current baseline by 2015.
- Increase miles of public rights-of-way re-use by 200% by 2014
- Minimum of 1 Gbps To Every School In Arizona by 2015
- Sustainable Funding Model Established by 2013

DIGITAL ARIZONA TACTICAL MODEL

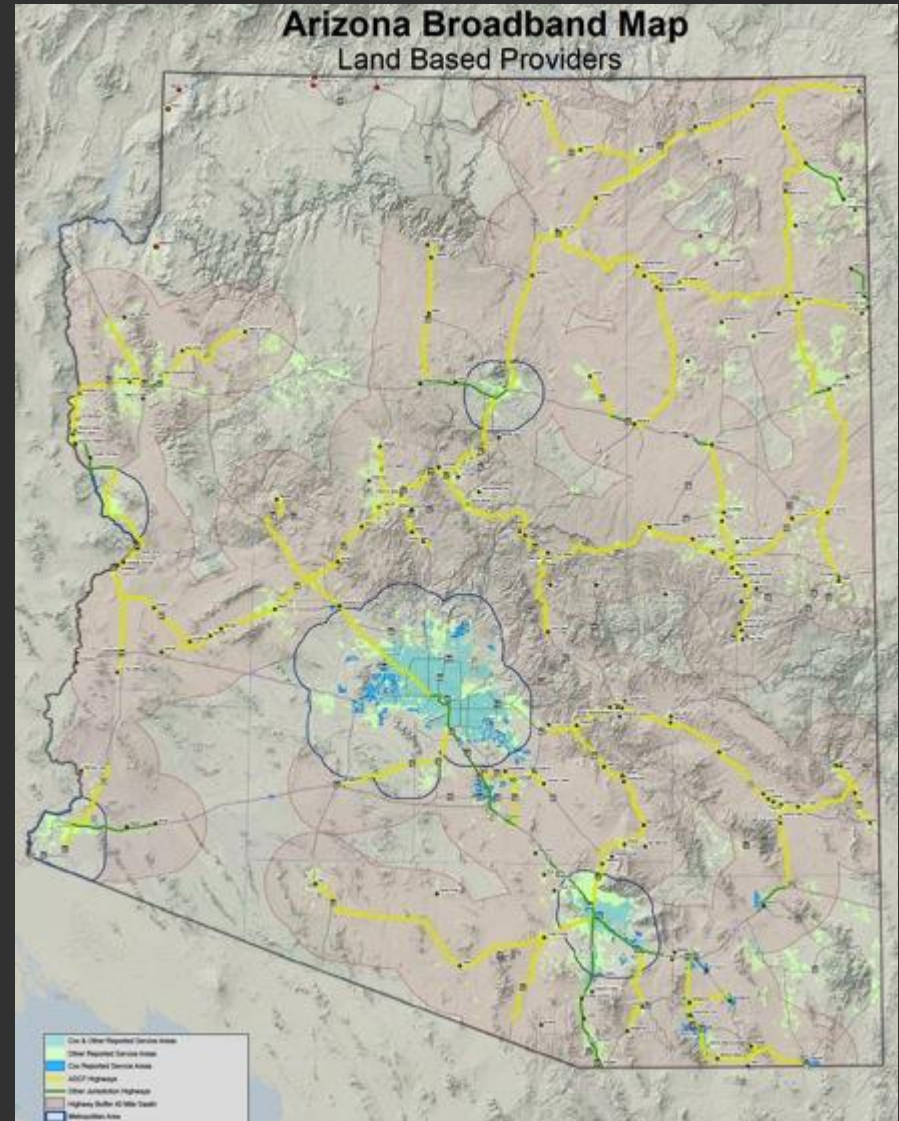


CONDUIT AND LOW COST HIGH CAPACITY WIRELESS



5 - 7 YEAR ESTIMATE

- \$25K to \$50K per rural conduit trench mile
- ~2500 to 3000 rural trench miles
- \$20M to \$50M per year
- Whole State covered in 7 to 10 years
- Program can then be “sunset” to maintenance only mode



CONDUIT TRENCHES HAVE ESSENTIALLY INFINITE INCREMENTAL CAPACITY:

(UP TO 43 PBPS POTENTIAL ALONG ANY SINGLE HIGHWAY)
(OR 21 MILLION POINT-TO-POINT 1.5 GIGABIT RADIO BEAMS)

Single Cell Tower - Ten 1.5- Gpbs Wireless Beams (15 Gbps) Translates to:

- One Hundred and Fifty – 100 megabit simultaneous Internet connections
- Six Hundred – 25 megabit simultaneous Internet connections
- 1800 simultaneous different high-def TV streams
- 5400 Internet Hi Definition IPTV subscribers

DIGITAL HIGHWAY LAW HAD WIDE SUPPORT

- Broadens the definition of "transportation" to include the transportation of information
- Permits the ADOT Director to consider the construction of trenches with multiple fiber conduits and cell tower sites along rural ADOT managed highways rights-of-way
- Multiple empty conduits will be installed in each highway trench made separately available to as many qualified carrier-class providers on a cost-recovery lease basis as desire to use them over time.
- Leased access will be non-discriminatory
- Funding for conduit construction must come from sources other than existing ADOT funding or the General Fund
- ADOT will manage all engineering and physical construction and traffic safety issues around the construction
- One conduit will be made available for ADOT "Smart Highway" use
- All other conduits will be available only for private sector provider use

FUNDING

- No funding in the Digital Highways Law itself
- Some seed funding from existing grants
- Leased conduit can be recycled to pay for additional capacity
- Provider investment under discussion
- State-wide eRate facilitation could provide significant funding from gain sharing (potential \$2-3M / yr)
- Possible shared funding with Public Safety Broadband (potential \$150M over 4-7 yrs)

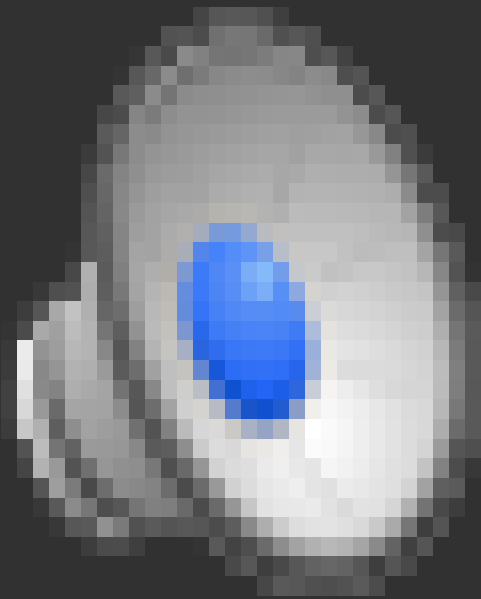
ASET WEBSITE FOR MAPS & ALL THINGS BROADBAND

ASET Broadband Website

www.DigitalArizona.gov



BROADBAND ECONOMIC PLANNING TOOL OVERVIEW



Questions?

DigitalArizona.gov